

Claims

- [c1] 1. A flat lamp structure comprising :
 - a gas discharge chamber;
 - a fluorescence substance disposed on the inner wall of the gas discharge chamber;
 - a discharge gas disposed in the gas discharge chamber;
 - and
 - a plurality of electrodes disposed on the outer wall of the gas discharge chamber.
- [c2] 2. The flat lamp structure of claim 1, wherein the gas discharge chamber comprises :
 - a dielectric substrate;
 - a plate disposed on the upper portion of the dielectric substrate; and
 - a plurality of strips disposed between the dielectric substrate and the plate, and plate connected to the edge of the dielectric substrate.
- [c3] 3. The flat lamp structure of claim 2, wherein the thickness of the dielectric substrate is between 0.3mm and 1.1mm.
- [c4] 4. The flat lamp structure of claim 2, wherein the dis-

tance between the dielectric substrate and the plate is between 0.5mm and 2.0mm.

- [c5] 5. The flat lamp structure of claim 1, wherein the discharge gas is an inert gas.
- [c6] 6. The flat lamp structure of claim 5, wherein the inert gas includes one of Xe, Ne or Ar.
- [c7] 7. The flat lamp structure of claim 1, wherein the electrode is a metal electrode.
- [c8] 8. The flat lamp structure of claim 7, wherein the metal electrode includes one of silver electrode or copper electrode.
- [c9] 9. The flat lamp structure of claim 1, further comprising a carrier substrate disposed beneath the dielectric substrate to carry the gas discharge chamber.
- [c10] 10. The flat lamp structure of claim 9, further comprising an adhesive disposed between the dielectric substrate and the carrier substrate and the adhesive connected the dielectric substrate and the carrier substrate.
- [c11] 11. The flat lamp structure of claim 10, wherein the adhesive includes one of glass adhesive, UV curing adhesive or thermal curing adhesive.

- [c12] 12. A flat lamp structure comprising :
- a gas discharge chamber;
 - a fluorescence substance disposed on the inner wall of the gas discharge chamber;
 - a discharge gas disposed in the gas discharge chamber;
 - and
 - a plurality of electrodes disposed on the outer wall of the gas discharge chamber.
- [c13] 13. The flat lamp structure of claim 12, wherein the gas discharge chamber comprises :
- a spacer to enhance the strength of the gas discharge chamber;
 - a dielectric substrate;
 - a plate disposed on the upper portion of the dielectric substrate; and
 - a plurality of strips disposed between the dielectric substrate and the plate, the plate being connected to the edge of the dielectric substrate.
- [c14] 14. The flat lamp structure of claim 13, wherein the thickness of the dielectric substrate is between 0.3mm and 1.1mm.
- [c15] 15. The flat lamp structure of claim 13, wherein the distance between the dielectric substrate and the plate is between 0.5mm and 2.0mm.

- [c16] 16. The flat lamp structure of claim 12, wherein the discharge gas is an inert gas.
- [c17] 17. The flat lamp structure of claim 16, wherein the inert gas includes one of Xe, Ne or Ar.
- [c18] 18. The flat lamp structure of claim 12, wherein the electrode is a metal electrode.
- [c19] 19. The flat lamp structure of claim 18, wherein the metal electrode includes one of silver electrode or copper electrode.
- [c20] 20. The flat lamp structure of claim 12, further comprising a carrier substrate disposed beneath the dielectric substrate to carry the gas discharge chamber.
- [c21] 21. The flat lamp structure of claim 20, further comprising an adhesive disposed between the dielectric substrate and the carrier substrate and the adhesive connected the dielectric substrate and the carrier substrate.
- [c22] 22. The flat lamp structure of claim 21, wherein the adhesive includes one of glass adhesive, UV curing adhesive or thermal curing adhesive.